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Comparison of BI-RADS® classification of magnetic resonance screening with BI-RADS® for mammography and ultrasonography

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Objective: The objective of this study was to compare BI-RADS® magnetic resonance imaging (MRI) in relation to BI-RADS® mammography (MMG) and ultrasonography (USG) from previous exams, determining the level of agreement between the three methods. **Methodology:** This is a retrospective cross-sectional study of examinations of women with indications for MRI in an imaging clinic in the city of Goiânia, GO, from 2021 to 2022. The sample was divided according to the BI-RADS® classification into two groups, one with low suspicion for classifications 1, 2, and 3 and another with high suspicion for classifications 0, 4, 5, and 6. The distribution of the sample profile in patients with BI-RADS® MRI low suspicion and high suspicion was tested by applying Pearson's chi-square test, relative frequency, and absolute frequency. Data were analyzed using the Statistical Package for Social Science (SPSS 26.0) with a significance level of 5% ($p < 0.05$).

Results: A total of 294 MRI scans were evaluated, of which 136 (46.3%) had previous MMG and 158 (53.7%) had previous USG. Comparing the BI-RADS® MRI classification with the BI-RADS® of previous high-suspicion exams, it was observed that both were concordant ($p < 0.01$), with 60% BI-RADS® MMG and 57.1% USG. Regarding the change in the BI-RADS classification, in 17.8% of the BI-RADS® of the MMG and USG exams as low suspicion after MRI, it changed to high suspicion; 18.7% of BI-RADS® from MMG and USG exams as high suspicion after MRI changed to low suspicion; 11.6% of BI-RADS® from MMG and USG exams as high suspicion after MRI had alteration, but remained in high suspicion; and 51.7% of BI-RADS® from MMG and USG exams as low suspicion after MRI had alteration, but remained in low suspicion.

Conclusion: Comparison of BI-RADS® MRI with BI-RADS® from previous exams shows the agreement factor in the detection of high suspicion for breast analysis.

Keywords: breasts; mammography; magnetic resonance; ultrasonography.